

S.6 Supplementary Material

S.6.1 Further Details on Data Construction

The regional Eurostat health data is provided at the NUTS 2 level for Austria, the Czech Republic, Germany, Spain (excluding Ceuta and Melilla), Ireland and France, while data is available at the NUTS 1 level for the remaining countries. Our hospital discharge measure captures a crude measure of neoplasm incidence in the region since it includes the number of

hospital discharges after a minimum of one night (or more than 24 hours) in the hospital for treatment of neoplasms. It follows that only those who do not require specific hospital treatment or those who are affected by the illness but who have not been diagnosed are excluded. By construction, the variable captures each hospitalization, even if it refers to a single patient's being hospitalized more than once. In other words, it is a measure that gives more weight to serious forms of neoplasms that require more times in the hospital. We check whether the hospitalization rate is affected by the characteristics of the healthcare system at the regional and national level in our robustness tests.

The relative wealth of the region is measured as the regional GDP per capita with respect to the European Union's average, meaning that a value greater or inferior to 100 indicates that the area's is, respectively, richer or poorer than the European average. Population density is measured as the ratio of total population per hectare. The proportion of people aged over sixty is calculated as the ratio between regional population aged over sixty over total population. In order to have a consistent sample across alternative model specifications, we include a dummy variable equal to one for each control's missing region/year observation, and assign a zero value to each missing observation in the corresponding control. When we repeat our estimations dropping all missing observations, as a result our sample size is reduced and the number of observations change across specifications, depending on the included controls, but we find no appreciable difference in the estimated coefficients (not reported, available upon request).

S.6.2 Further Details on the Placebo Test

We perform a placebo test, where our fallout dummies are substituted with a set of randomly assigned placebo dummies that respect the proportions of the baseline fallout specification. We set the placebo to thirty-one areas with no fallout, twenty-three areas with F1 fallout $<10 \text{ kBq/m}^2$, seventeen areas with F2 fallout $<40 \text{ kBq/m}^2$ and nine areas with F3 fallout $>40 \text{ kBq/m}^2$. To obtain Table S.10's results we first generated 1000 random fallout associations to the eighty regions included in our analysis, then we performed a Random Effect estimation on the generated longitudinal data. Table S.10 reports how many times each specific fallout dummy combination resulted significant out of the 1000 simulations.

S.6.3 Further Details on the Estimates of Associations with Other Medical Conditions

The medical conditions other than neoplasms observed in our data are (corresponding ICD10 code in brackets): Certain infectious and parasitic diseases (A00-B99), Endocrine, nutritional and metabolic diseases (E00-E90), Mental and behavioural disorders (F00-F99), Diseases of the nervous system (G00-G99), Diseases of the eye and adnexa (H00-H59), Diseases of the circulatory system (I00-I99), Diseases of the respiratory system (J00-J99), Diseases of the digestive system (K00-K93), Diseases of the skin and subcutaneous tissue (L00-L99), Diseases of the musculoskeletal system and connective tissue (M00-M99), Diseases of the genitourinary system (N00-N99), Pregnancy, childbirth and the puerperium (O00-O99), Certain conditions originating in the perinatal period (P00-P96), Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99), Symptoms, signs and abnormal clinical and laboratory

findings, not elsewhere classified (R00-R99), Injury, poisoning and certain other consequences of external causes (S00-T98), Factors influencing health status and contact with health services (Z00-Z99).

S.6.4 Further Details on the Comparison of Our Findings with the INWORKS Study

In order to compare our estimates with the INWORKS findings through a sensible comparison, we need to make some simplifying assumptions. An initial deposition of 37 kBq/m² after Chernobyl approximates to an external dose of 1 mSv in the first year after deposition, in absence of shielding. Given that the general population live in houses, the shielding effect that is usually assumed in the literature is around 50%. As a result, we can estimate a maximum of 5 mSv as external dose per decade of exposure, given this level of initial deposition. This is a rough estimate of the biological impact of the fallout, since the actual effect is influenced by the radioactive decay and burial in the soil, the ingestion of contaminated food and water and residents' mobility among other factors.

Assuming an gradual attenuation of the effect over time, we consider 20 years of exposure only, i.e. from 1986 to 2006, which is conservative since our data on hospital discharges cover up to 2013. As a result, we end up with an external dose of 10 mSv associated to a deposition of 37 kBq m². This means that for the fallout range comprised between 2 and 10 kBq m², assuming an average dose of 5 kBq m², in 20 years with shielding we should have an external dose of about 1.35 mSv (i.e. $1/37 \times 5 \times 0.5 \times 20$). Considering the fallout range comprised between 10 and 40 kBq/m², assuming an average dose of 25 kBq/m², in 20 years

with shielding we should observe an external dose of about 6.76 mSv (i.e. $1/37 \times 25 \times 0.5 \times 20$). For what concerns the fallout range comprised between 40 and 185 kBq/m², assuming an average dose of 110 kBq/m² as the affected regions were only partially hit by such fallout intensity, in 20 years with shielding we should observe an external dose of about 29.73 mSv (i.e. $1/37 \times 110 \times 0.5 \times 20$).

Richardson et al.⁴ find that the excess relative risk (ERR henceforth) at 1 Gy (i.e. approximately 1 Sv in the Chernobyl case) is around 0.5, i.e. 50%, with a 90% confidence interval comprised between 0.23 and 0.82, considering an average accumulated radiation dose of 20 mSv in their data. We can then provide a rough comparison of our findings with this benchmark, under the assumption that the ERR calculated using our estimates is comparable with their measure of ERR.

Given the three levels of fallout deposition in our data, corresponding to three approximate levels of exposure for 20 years x_{20} , i.e. 1.35, 6.76 and 29.73 mSv, the INWORKS findings imply an ERR equal to 0.07, 0.34 and 1.48 percentage points, respectively. These are calculated as $50/1000 \times x_{20}$. The 95% ERR confidence intervals associated to each fallout intensity are, respectively, [0.03, 0.11], [0.10, 0.58], and [0.33, 2.52].

In order to calculate an approximate comparable ERR measure from our estimates we rescale our point estimates by the average of hospital discharges in no fallout regions, equal to 1.08. As a result, the 95% ERR confidence intervals associated to each fallout intensity are, respectively, [0.27, 0.81], [0.39, 0.87], and [0.85, 1.67] for the baseline RE model, and [0.02, 0.64], [0.07, 0.73], and [0.42, 1.40] for the RE model with additional controls.

S.6.5 Further Details on the Estimate of the Excess Curative Care Costs Implied by Our Model

Using Eurostat data on health care expenditure by function³² we first estimate the average day cost of an hospitalization for curative care in each country, following a procedure similar to the one used by Luengo-Fernandez et al.⁵⁸ The expenditure data, i.e. total million of euros spent in curative care for in-patients, is divided by the total number of curative care bed days. The total number of curative care bed days is provided directly by Eurostat. However, the data is not available for all regions/years. However, the dataset has information on bed days classified by ICD10 (International Statistical Classification of Diseases and Related Health Problems 10th Revision) illnesses categories. We therefore sum all hospital days across the ICD10 illness categories to obtain an estimate of total curative care bed days in the country.

The estimated cost of each hospital discharge by neoplasm is the result of the multiplication of the average day cost of an hospitalization by curative care times the average length of stay (in days) of an in-patient classified for neoplasm, provided by Eurostat. Unfortunately, no expenditure data can be obtained specifically for neoplasm treatments. For this reason, assuming that the treatment of neoplasms is on average more costly than the average curative care treatment, our estimates should be considered a lower bound of the actual neoplasm-related costs. Results from the procedure are shown in Table S.16.

Once the average cost of each hospitalization is calculated, we can use it to provide a rough measure the increase in total costs associated to the excess hospital discharges by neoplasms predicted by our model. In order to do this, we multiply the number of residents in each region by the estimated average excess hospital discharges for 100 inhabitants associated to

the appropriate fallout category in the observed period in the region, obtaining the average excess hospitalizations due to Chernobyl in each region. For simplicity, in our calculations we use the point estimates of the OLS model on time averages. Similar findings are obtained when using the point estimates from the Random Effect model. We then multiply the sum of each country's regional values by the relative estimated hospitalization cost at the country level, obtaining the estimated excess hospitalization costs for each country.

S.6.6 Supplementary Tables

Table S.1 – Fallout dummy specification

^{137}Cs concentration (kBq/m^2)		Dummy variable	Number of obs.
<	2	-	31
>	2 and < 10	D_{F1}	23
>	10 and < 40	D_{F2}	17
>	40 and < 185	D_{F3}	7
>>	40 and < 185	D_{F4}	2

Fallout dummy specification: F1 Fallout $>2 \text{ kBq}/\text{m}^2 < 10 \text{ kBq}/\text{m}^2$, F2 Fallout $>10 \text{ kBq}/\text{m}^2$ and $< 40 \text{ kBq}/\text{m}^2$, F3 Fallout $>40 \text{ kBq}/\text{m}^2$, F4 fallout $>40 \text{ kBq}/\text{m}^2$ in more than 50% of the area. No region in the dataset records a fallout intensity greater than $185 \text{ kBq}/\text{m}^2$.

Table S.2 – Description of main variables

Variable	Description
Fallout Dataset: own elaboration Time range: - Dimension: dummy	From the Atlas of Caesium Deposition on Europe After the Chernobyl Accident by the European Commission (1998) fallout dummies were assigned at Nuts 2 level for Austria, the Czech Republic, Germany, Ireland, Spain and France, and at Nuts 1 level for Denmark, Estonia, Latvia, Lithuania, Luxemburg, Netherlands and Portugal. Each dummy corresponds to the highest concentration of ^{137}Cs expressed in kBq m $^{-2}$. Assigned thresholds follow the division presented in the map: D_{F1} concentration >2 and <10 kBq m $^{-2}$, D_{F2} concentration >10 and < 40 kBq m $^{-2}$, D_{F3} concentration >40 kBq m $^{-2}$, D_{F4} concentration >40 kBq m $^{-2}$ in more than 50% of the area. In the baseline specification, regions in D_{F4} are categorized in D_{F3} dummy.
Hospital discharges Dataset: Eurostat Time range: 2000-2013 Dimension: standardized over 100 inhabitants	A hospital discharge is considered as the formal release of a patient from a hospital after a procedure or course of treatment. Discharges occur when the patient leaves because of finalisation of treatment, signs out against medical advice, transfers to another health care institution or because of death. Discharges refer to in-patients: an in-patient is a patient who is formally admitted to an institution for treatment and/or care and stays for a minimum of one night or more than 24 hours in the hospital or other institution providing in-patient care (descriptions from Eurostat). The following years are missing for the following countries: DK: 2010-2013; EE: 2000-2002, 2012 and 2013; LT: 2000, 2012 and 2013; LU: 2012, 2013; LV: 2000-2003 and 2012,2013; NL: 2000,2001 and 2013; PT: 2000-2004 and 2011-2013. Database name: Hospital discharges by diagnosis and NUTS 2 regions, in-patients, per 100 000 inhabitants - total hlth_co_disch2t. Data extracted on 08 September 2015. Version update 01 July 2015. Hospital discharges by neoplasms ICD10 code: C00-D48.
Deaths by Neoplasm Dataset: Eurostat Time range: 2000-2010 Dimension: standardized over 100,000 inhabitants	Data refer to the reported number of deaths by the specific cause over area population. Database name: Causes of death by NUTS 2 regions - crude death rate per 100 000 inhabitants - annual data (hlth_cd_acdr). Data extracted on 25 October 2017. Version update 29 September 2016.
Baseline controls	
GDP per capita Dataset: Eurostat Time range: 2000-2013 Dimension: percentage of EU average	Year's corresponding GDP per capita measured as Euros per inhabitant in percentage of the European Union average. A value of 1 corresponds to EU's average. Values higher or lower than 1 indicate respectively that the area's GDP per capita is greater or lower than the European average. Data are not available for the year 2009 in all German regions. Eurostat dataset code: nama_10r_2gdp. Data extracted on 09 September 2015. Version update 21 May 2015.
Population density Dataset: Eurostat Time range: 2000-2013 Dimension: raw number	The variable is expressed as area's population over surface in square kilometers. It expresses the concentration of individuals standardized by the region or State area expansion. The variable has been rescaled as (population/square kilometers)/1000. Eurostat dataset code: demo_r_d3dens. Data extracted on 09 September 2015. Version update 31 July 2015.
Proportion population aged over 60 Dataset: Eurostat (elaboration) Time range: 2000-2013 Dimension: percentage points	Own elaboration from population aged over sixty and total area's population data, both from Eurostat database. The variables is calculated as the ratio between population aged over sixty and total population. Eurostat dataset code: demo_r_pjangroup. Data extracted on 10 September 2015. Version update 04 August 2015.
Medical observation Dataset: Eurostat Time range: 2000-2013 Dimension: standardized over 100 inhabitants	Hospital discharges by hospital discharges by medical observation and evaluation for suspected diseases and conditions (ICD10 code: Z03). Yearly observations lack for the following countries: DK: 2010-2013; EE: 2000-2001, 2012 and 2013; LT: 2000, 2012 and 2013; LU: 2012, 2013; LV: 2000-2003 and 2012,2013; NL: 2000,2001 and 2013; PT: 2000-2004 and 2011-2013. Data non available for Estonia (EE) from 2003 to 2011, for ES23 for 2003, and for ES63 for 2013. Database name: Hospital discharges by diagnosis and NUTS 2 regions, in-patients, per 100 000 inhabitants - total hlth_co_disch2t. Data extracted on 08 September 2015. Version update 01 July 2015.
Doctors Dataset: Eurostat Time range: 2000-2013 Dimension: standardized over 100 inhabitants	Physicians or doctors available in the year for providing health care services in the area, regardless of the sector of employment (description from Eurostat). With respect to neoplasm hospital discharges, data are not available for all Czech regions from 2000 to 2003, for Estonia (EE) from 2004 to 2011, for Irish regions from 2000 to 2002, for Lithuania from 2001 to 2011, for Latvia from 2004 to 2011, and for Luxembourg from 2000 to 2011. Eurostat dataset code: hlth_rs_prsrg . Data extracted on 24 September 2015. Version update 14 August 2015.
Non curative beds Dataset: Eurostat Time range: 2000-2013 Dimension: standardized over 100 inhabitants	Total available beds in hospitals not classified as for curative care, variable from Eurostat. With respect to neoplasm hospital discharges, data are not available for all Czech regions from 2000 to 2006, for Estonia (EE) from 2003 to 2011, for Irish regions from 2000 to 2002, for Lithuania from 2001 to 2011, for Latvia from 2004 to 2011, for Luxembourg from 2000 to 2011, for the Netherlands from 2010 to 2012. Eurostat dataset code: hlth_rs_bdsrg . Data extracted on 10 September 2015. Version update 14 August 2015.
Additional controls	
Distance Dataset: own elaboration Time range: - Dimension: kilometers	The variable expresses the region's distance from Chernobyl's nuclear power plant in kilometers, calculated from the region's geographical center. Data have been elaborated through Google Earth software ^a .
Longitude Dataset: own elaboration Time range: - Dimension: decimal degrees	The variable expresses associated region's or country's longitude. Areas east of Greenwich take positive longitude values, areas west of Greenwich are associated to negative longitude values. Informations extracted from http://www.distancesfrom.com/
Life expectancy in 1985 Dataset: World Bank Time range: 1985 Dimension: years	Life expectancy at birth in 1985 (pre-Chernobyl's accident) at country level. It indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life (description from World Bank).
Wooded areas Dataset: Eurostat (elaboration) Time range: 2000-2013 Dimension: percentage points	Own elaboration from wooded areas (in hares) and total territory's extension (in hares) variables, both from Eurostat database. The variables is calculated as the ratio between year's hares occupied by wooded areas and the territory corresponding extension in hares. It expresses the percentage of total area extension covered by woods.
Health care expenditure by financing agent Dataset: Eurostat Time range: 2003-2013 Dimension: share of GDP	Health care expenditure divided by financing agents. Categories taken from Eurostat division following the International Classification for the Health Accounts (ICHA).
Health care expenditure by function Dataset: Eurostat Time range: 2003-2013 Dimension: expenditure per inhabitant	Health care expenditure divided by function, i.e. the purpose of the expense. Categories taken from Eurostat division following the International Classification for the Health Accounts (ICHA).

^aGoogle Earth (Version 7.1.2.2041) [Software]. Mountain View, CA: Google Inc. (2013). Available from <http://www.google.com/earth/>

Table S.3 – Summary Statistics

Averages:					
Variable	Obs	Mean	Std.Dev.	Min	Max
Hospital discharges for neoplasms (%)	80	1.650	.815	.565	3.677
<i>Controls</i>					
GDP	80	1.045	.423	.311	2.874
Population Density	80	.323	.727	.025	4.202
Proportion 60+	80	.228	.030	.151	.290
Medical obs.	79	.039	.096	.006	.867
Doctors	74	.354	.076	.249	.672
Non curative beds	76	.232	.137	.027	.70
Pooled Sample:					
Variable	Obs	Mean	Std.Dev.	Min	Max
Hospital discharges for neoplasms (%)	1021	1.666	.803	.203	3.740
<i>Controls</i>					
GDP	1021	1.051	.414	.200	3.140
Population Density	1021	.326	.722	.022	4.439
Proportion 60+	1021	.228	.033	.145	.317
Medical obs.	1011	.037	.088	0	1.074
Doctors	921	.354	.081	.231	.695
Non curative beds	916	.242	.144	.024	.730

Table S.4 – Alternative fallout specifications

Method: Model:	Dependent variable: hospital discharges by neoplasms over 100 inhabitants						T.A. OLS Random Effects Random Effects T.A. OLS	>50% of soil surface >30% of soil surface	0.673*** (0.150)			
	(1) Baseline		(2)		(3)							
	Random Effects	T.A. OLS	Random Effects	T.A. OLS	Random Effects	T.A. OLS						
D _{F1}	0.587*** (0.152)	0.556*** (0.174)	0.598*** (0.104)	0.707*** (0.127)	0.509*** (0.121)	0.509*** (0.121)	0.673*** (0.150)	0.673*** (0.150)	0.673*** (0.150)			
D _{F2}	0.685*** (0.133)	0.952*** (0.137)	1.111*** (0.192)	1.183*** (0.210)	1.168*** (0.199)	1.168*** (0.199)	1.284*** (0.224)	1.284*** (0.224)	1.284*** (0.224)			
D _{F3}	1.368*** (0.223)	1.460*** (0.226)	2.104*** (0.113)	2.157*** (0.129)	2.070*** (0.0998)	2.070*** (0.0998)	2.135*** (0.0874)	2.135*** (0.0874)	2.135*** (0.0874)			
GDP	0.187 (0.212)	0.348*** (0.155)	0.133 (0.192)	0.190 (0.123)	0.165 (0.199)	0.165 (0.199)	0.284* (0.146)	0.284* (0.146)	0.284* (0.146)			
Population density	0.393*** (0.0724)	0.363*** (0.107)	0.381*** (0.0699)	0.344*** (0.122)	0.365*** (0.0711)	0.365*** (0.0711)	0.351*** (0.122)	0.351*** (0.122)	0.351*** (0.122)			
Proportion 60+	2.565* (1.325)	8.901*** (2.072)	2.734** (1.303)	7.972*** (2.158)	2.894** (1.351)	2.894** (1.351)	8.879*** (2.661)	8.879*** (2.661)	8.879*** (2.661)			
Medical obs.	0.0137 (0.459)	0.107 (0.399)	0.0310 (0.455)	0.104 (0.412)	0.0222 (0.457)	0.0222 (0.457)	0.0127 (0.481)	0.0127 (0.481)	0.0127 (0.481)			
Doctors	0.917*** (0.342)	1.019 (1.010)	0.926*** (0.335)	1.078 (1.225)	0.883*** (0.332)	0.883*** (0.332)	0.404 (1.204)	0.404 (1.204)	0.404 (1.204)			
Non curative beds	0.943*** (0.253)	0.718 (0.534)	0.996*** (0.260)	0.790 (0.594)	1.042*** (0.256)	1.042*** (0.256)	0.824 (0.588)	0.824 (0.588)	0.824 (0.588)			
Observations	1,021	80	1,021	80	1,021	80	80	80	80			
R ²	0.600	0.739	0.635	0.741	0.588	0.588	0.702	0.702	0.702			
Number of id	80		80		80		80		80			

Note: Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$. In columns 1 and 2 areas have been associated to the highest level of fallout present on their surface, regardless of the dimension (baseline). Columns 3 and 4, and 5 and 6 associate the area to the highest fallout level detected on their surface only if the dimension of the zone is greater or equal to, respectively, 30% (3 and 4) and 50% (5 and 6). Results from Random Effects model (RE) including year fixed effects and the following baseline controls: GDP per capita, population density, proportion of population aged over 60, and per capita number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area, and number of available non-curative-care beds in the area, all standardized for 100 inhabitants.

Table S.5 – Quadratic specification

Dependent variable: hospital discharges by neoplasms over 100 inhabitants						
Model:	(1) Pooled OLS	(2) Random Effects	(3) T.A. OLS	(4) Pooled OLS	(5) Random Effects	(6) T.A. OLS
Fallout (lower bound)	0.0893*** (0.00505)	0.0729*** (0.0185)	0.108*** (0.0188)			
Fallout (lower bound) squared	-0.00144*** (0.000128)	-0.00106*** (0.000486)	-0.00183*** (0.000484)			
Fallout (average value)				0.0372*** (0.00205)	0.0305*** (0.00751)	0.0448*** (0.00764)
Fallout (average value) squared				-0.000227*** (1.81e-05)	-0.000172*** (6.83e-05)	-0.000285*** (6.83e-05)
GDP	0.372*** (0.0405)	0.221 (0.197)	0.372*** (0.160)	0.372*** (0.0405)	0.220 (0.198)	0.371** (0.160)
Population density	0.413*** (0.0239)	0.446*** (0.0657)	0.434*** (0.0966)	0.413*** (0.0240)	0.446*** (0.0657)	0.433*** (0.0967)
Proportion 60+	10.58*** (0.618)	3.143*** (1.364)	10.02*** (2.471)	10.57*** (0.618)	3.139*** (1.364)	10.01*** (2.468)
Medical obs.	0.477*** (0.162)	0.0687 (0.423)	0.503 (0.364)	0.471*** (0.162)	0.0680 (0.423)	0.496 (0.364)
Doctors	1.031*** (0.250)	0.864*** (0.335)	0.831 (1.000)	1.030*** (0.249)	0.864*** (0.335)	0.830 (0.999)
Non curative beds	0.926*** (0.132)	1.041*** (0.243)	1.075*** (0.452)	0.921*** (0.132)	1.040*** (0.243)	1.068*** (0.453)
Observations	1,021	1,021	80	1,021	1,021	80
R ²	0.669	0.568	0.719	0.669	0.569	0.720
Number of id	80	80	80	80	80	80

Note: Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Lower bound numeric fallout specification: no fallout areas are associated to a value of 0, D_{F1} areas are associated to a value of 2, D_{F2} areas are associated to a value of 10, D_{F3} areas are associated to a value of 40. Average value fallout specification: no fallout areas are associated to a value of 1, D_{F1} areas are associated to a value of 6, D_{F2} areas are associated to a value of 25, D_{F3} areas are associated to a value of 112.5. Original fallout definition: F1 Fallout $> 2 \text{ kBq}/\text{m}^2$ and $< 10 \text{ kBq}/\text{m}^2$, F2 Fallon $> 10 \text{ kBq}/\text{m}^2$ and $< 40 \text{ kBq}/\text{m}^2$, F3 Fallon $> 40 \text{ kBq}/\text{m}^2$. Results from Pooled OLS model (columns 1 and 4) and Random Effects model (columns 2 and 5) both including year fixed effects and the following baseline controls: GDP per capita, population density, proportion of population aged over 60, and per capita number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area, and number of available non curative care beds in the area, all standardized for 100 inhabitants. OLS results using 2000-2013 averages (columns 3 and 6) include same controls and robust standard errors.

Table S.6 – Fallout effect on hospital discharges, alternative hospital beds specifications

Model:	Dependent variable: hospital discharges by neoplasms over 100 inhabitants			
	(1) Random Effects	(2) Random Effects	(3) Random Effects	(4) Random Effects
D _{F1}	0.587*** (0.152)	0.447*** (0.131)	0.437*** (0.136)	0.303*** (0.112)
D _{F2}	0.685*** (0.133)	0.525*** (0.133)	0.512*** (0.116)	0.325*** (0.114)
D _{F3}	1.368*** (0.223)	1.004*** (0.255)	1.123*** (0.219)	0.513*** (0.133)
GDP	0.187 (0.212)	0.184 (0.185)	0.0891 (0.187)	0.174 (0.124)
Population density	0.393*** (0.0724)	0.279*** (0.0727)	0.367*** (0.0633)	0.270*** (0.0504)
Proportion 60+	2.565* (1.325)	2.737* (1.495)	1.871 (1.227)	1.965** (0.849)
Medical obs.	0.0137 (0.459)	0.271 (0.529)	0.160 (0.450)	-0.383*** (0.136)
Doctors	0.917*** (0.342)	0.860** (0.391)	0.768** (0.341)	0.423** (0.170)
Non curative beds	0.943*** (0.253)			-0.0205 (0.205)
Curative care beds		1.542** (0.635)		
Available beds in hospitals			0.998*** (0.222)	
All other discharges				0.080*** (0.005)
Observations	1,021	1,021	1,021	1,021
R ²	0.600	0.718	0.678	0.819
Number of id	80	80	80	80

Note: Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$, F4 Fallout $> 40 \text{ kBq/m}^2$ (more than 50%). Dependent variable expressed in hospital discharges over 100 inhabitants. Baseline controls: GDP per capita, population density, proportion of population aged over 60, and number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area and number of available non-curative-care beds in the area, all standardized for 100 inhabitants. All results are obtained by a Random Effect specification with robust standard errors and year fixed effects (not reported). Alternative controls include curative-care beds (column 2), all available beds in hospital (curative + non-curative) (column 3), and all other hospital discharges excluding neoplasm and medical observation (column 4).

Table S.7 – Fallout effect on hospital discharges, controlling for health care expenditure by financing agent

Dependent variable: hospital discharges by neoplasms over 100 inhabitants								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
D _{F1}	0.587*** (0.152)	0.624*** (0.151)	0.626*** (0.152)	0.628*** (0.151)	0.603*** (0.152)	0.608*** (0.147)	0.588*** (0.151)	0.583*** (0.150)
D _{F2}	0.680*** (0.138)	0.702*** (0.138)	0.719*** (0.136)	0.706*** (0.138)	0.692*** (0.135)	0.689*** (0.132)	0.683*** (0.140)	0.676*** (0.135)
D _{F3}	1.368*** (0.225)	1.400*** (0.224)	1.390*** (0.220)	1.401*** (0.222)	1.376*** (0.224)	1.399*** (0.227)	1.367*** (0.224)	1.362*** (0.226)
GDP	0.182 (0.210)	0.246 (0.181)	0.202 (0.211)	0.268 (0.182)	0.185 (0.213)	0.202 (0.231)	0.186 (0.208)	0.186 (0.214)
Population density	0.395*** (0.0723)	0.382*** (0.0694)	0.386*** (0.0723)	0.376*** (0.0692)	0.393*** (0.0728)	0.380*** (0.0764)	0.393*** (0.0721)	0.392*** (0.0729)
Proportion 60+	2.576* (1.327)	2.097* (1.206)	2.055 (1.301)	1.974 (1.208)	2.317* (1.344)	2.366* (1.303)	2.548* (1.326)	2.640* (1.350)
Medical obs.	0.0156 (0.458)	0.161 (0.272)	-0.109 (0.436)	0.0663 (0.281)	-0.0262 (0.450)	-0.262 (0.406)	0.0133 (0.459)	0.00589 (0.466)
Doctors	0.914*** (0.344)	0.839** (0.329)	0.864*** (0.335)	0.825** (0.329)	0.890*** (0.340)	0.911*** (0.350)	0.916*** (0.340)	0.922*** (0.340)
Non curative beds	0.952*** (0.253)	0.957*** (0.247)	0.925*** (0.254)	0.941*** (0.245)	0.949*** (0.256)	0.919*** (0.243)	0.947*** (0.253)	0.939*** (0.256)
All financing agents	-0.00479 (0.0107)							
Private social insurance		-2.791*** (0.397)						
Private household out-of-pocket expenditure			0.109*** (0.0239)					
Private social insurance/ Total				-23.59*** (3.542)				
Private household out-of-pocket expenditure/Total					0.446*** (0.143)			
All the rest/ Total						0.737** (0.294)		
Private sector							-0.00629 (0.0402)	
Private sector/ Total								-0.234 (0.361)
Observations	1,021	1,021	1,021	1,021	1,021	1,021	1,021	1,021
Number of id	80	80	80	80	80	80	80	80
R ²	0.597	0.600	0.599	0.601	0.595	0.615	0.600	0.601

Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$. Random Effects model with robust standard errors and year fixed effects (not reported). Dependent variable expressed in hospital discharges over 100 inhabitants. Baseline controls: GDP per capita, population density, proportion of population aged over 60, and per capita number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area, and number of available non-curative-care beds in the area, all standardized for 100 inhabitants. All health care expenditure variables are expressed as share of total GDP. Random Effects specification with robust standard errors.

Table S.8 – Fallout effect on hospital discharges, controlling for health care expenditure by function

Dependent variable: hospital discharges by neoplasms over 100 inhabitants							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D _{F1}	0.585*** (0.154)	0.596*** (0.153)	0.622*** (0.150)	0.575*** (0.156)	0.605*** (0.150)	0.588*** (0.150)	0.591*** (0.154)
D _{F2}	0.657*** (0.142)	0.665*** (0.140)	0.656*** (0.139)	0.668*** (0.140)	0.684*** (0.135)	0.682*** (0.132)	0.627*** (0.145)
D _{F3}	1.377*** (0.233)	1.393*** (0.236)	1.328*** (0.222)	1.368*** (0.226)	1.383*** (0.226)	1.354*** (0.219)	1.317*** (0.226)
GDP	0.217 (0.195)	0.197 (0.208)	0.212 (0.223)	0.212 (0.187)	0.208 (0.224)	0.208 (0.226)	0.265 (0.177)
Population density	0.397*** (0.0722)	0.400*** (0.0737)	0.368*** (0.0738)	0.396*** (0.0722)	0.377*** (0.0754)	0.376*** (0.0759)	0.367*** (0.0715)
Proportion 60+	2.571** (1.306)	2.553* (1.312)	2.114 (1.311)	2.679** (1.360)	1.971 (1.365)	2.181 (1.378)	2.453* (1.266)
Medical obs.	-0.00132 (0.421)	-0.0271 (0.408)	-0.180 (0.380)	0.0791 (0.441)	-0.145 (0.411)	-0.0389 (0.433)	0.368 (0.351)
Doctors	0.885*** (0.336)	0.894*** (0.340)	0.806** (0.325)	0.911*** (0.340)	0.898*** (0.348)	0.919*** (0.347)	0.800** (0.311)
Non curative beds	0.991*** (0.253)	1.008*** (0.252)	0.758*** (0.251)	0.969*** (0.260)	0.875*** (0.242)	0.874*** (0.251)	0.686*** (0.255)
Services of curative care	-9.67e-05*** (3.71e-05)						0.00166*** (0.000489)
In-patient curative care		-0.000175*** (4.80e-05)					-0.00144*** (0.000471)
Day cases of curative care			-0.000884*** (0.000128)				-0.00332*** (0.000834)
Out-patient curative care				-0.000110 (0.000119)			-0.00189*** (0.000412)
Services of curative home care					0.00111 (0.000814)		-0.00129 (0.00243)
Prevention of non-communicable diseases						0.00204* (0.00116)	-0.00149 (0.00183)
Observations	1,021	1,021	1,021	1,021	1,021	1,021	1,021
Number of id	80	80	80	80	80	80	80
R ²	0.581	0.581	0.597	0.591	0.601	0.610	0.593

Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$. Random Effects model with robust standard errors and year fixed effects (not reported). Dependent variable expressed in hospital discharges over 100 inhabitants. Baseline controls: GDP per capita, population density, proportion of population aged over 60, and per capita number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area, and number of available non-curative-care beds in the area, all standardized for 100 inhabitants. All health care expenditure variables are expressed in per capita terms. Random Effects specification with robust standard errors.

Table S.9 – A. Fallout effect on hospital discharges, excluding one country at a time - T.A. OLS

Variables	Dependent variable: hospital discharges by neoplasms over 100 inhabitants							
	(1) Excl. AT	(2) Excl. CZ	(3) Excl. DE	(4) Excl. DK	(5) Excl. EE	(6) Excl. ES	(7) Excl. FR	(8) Excl. IE
D _{F1}	0.466*** (0.165)	0.569*** (0.178)	0.0727 (0.0977)	0.416** (0.171)	0.556*** (0.173)	0.344** (0.146)	1.289*** (0.324)	0.556*** (0.174)
D _{F2}	0.791*** (0.117)	1.005*** (0.193)	0.826*** (0.184)	0.772*** (0.176)	0.952*** (0.136)	0.697*** (0.186)	1.145*** (0.212)	0.953*** (0.136)
D _{F3}	0.873*** (0.0953)	1.654*** (0.284)	1.491*** (0.250)	1.023*** (0.220)	1.460*** (0.224)	1.066*** (0.227)	1.484*** (0.257)	1.460*** (0.224)
GDP	0.145 (0.103)	0.210 (0.147)	0.309 (0.200)	0.313** (0.156)	0.348** (0.154)	0.302** (0.128)	0.284* (0.160)	0.351** (0.158)
Population density	0.477*** (0.161)	0.424*** (0.132)	0.448*** (0.124)	0.313*** (0.109)	0.363*** (0.107)	0.157 (0.140)	0.0877 (0.124)	0.363*** (0.107)
Proportion 60+	9.929*** (2.042)	8.108*** (2.356)	4.096*** (1.411)	7.990*** (1.917)	8.901*** (2.059)	12.51*** (2.438)	6.807*** (2.270)	8.890*** (2.065)
Medical obs.	0.420 (0.333)	0.192 (0.394)	0.525* (0.262)	14.83*** (4.004)	0.107 (0.397)	-0.231 (0.495)	-0.682 (0.452)	0.104 (0.399)
Doctors	0.314 (0.972)	0.705 (1.302)	0.919 (0.915)	1.776* (0.978)	1.019 (1.004)	2.730** (1.341)	3.192*** (1.183)	1.015 (1.004)
Non curative beds	1.135** (0.504)	0.749 (0.542)	1.045*** (0.368)	0.702 (0.488)	0.718 (0.531)	-0.598 (1.101)	0.780 (0.903)	0.718 (0.532)
Observations	71	72	64	79	79	63	59	78
R ²	0.740	0.748	0.825	0.787	0.739	0.693	0.844	0.732

Abbreviations: AT, Austria; CZ, Czech Republic; DE, Germany; DK, Denmark; EE, Estonia; ES, Spain; FR, France; IE, Ireland; LT, Lithuania; LV, Latvia; LU, Luxembourg; NL, Netherlands; PT, Portugal. Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$. All columns are obtained by the same OLS specification aggregating data over 2000-2013 averages, used controls are only the ones reported in the table. Dependent variable expressed in hospital discharges over 100 inhabitants.

Table S.9 – B. Fallout effect on hospital discharges, excluding one country at a time - T.A. OLS

Variables	Dependent variable: hospital discharges by neoplasms over 100 inhabitants										(16)		
	(9) Excl. LT	(10) Excl. LV	(11) Excl. LU	(12) Excl. NL	(13) Excl. PT	(14) Excl. AT CZ	(15) Excl. ES PT	(15) Excl. AT CZ ES PT	(16) Excl. AT CZ ES PT				
D _{F1}	0.555*** (0.175)	0.561*** (0.179)	0.558*** (0.175)	0.608*** (0.182)	0.558*** (0.175)	0.459*** (0.163)	0.300** (0.142)	0.255* (0.137)					
D _{F2}	0.962*** (0.137)	1.012*** (0.140)	0.961*** (0.137)	0.969*** (0.136)	0.957*** (0.137)	0.776*** (0.169)	0.622*** (0.222)	0.622*** (0.220)					
D _{F3}	1.461*** (0.224)	1.460*** (0.212)	1.459*** (0.223)	1.473*** (0.225)	1.465*** (0.226)	0.842*** (0.110)	0.959*** (0.300)	0.576*** (0.157)					
GDP	0.386** (0.161)	0.595*** (0.190)	0.387** (0.161)	0.377** (0.165)	0.353** (0.157)	0.167 (0.135)	0.268** (0.119)	0.120 (0.103)					
Population density	0.360*** (0.105)	0.338*** (0.0945)	0.358*** (0.105)	0.364*** (0.111)	0.365*** (0.107)	0.490*** (0.175)	0.109 (0.159)	0.236 (0.231)					
Proportion 60+	8.952*** (2.072)	8.850*** (2.104)	8.832*** (2.084)	8.607*** (2.041)	8.892*** (2.074)	10.21*** (2.353)	12.72*** (2.376)	14.26*** (3.237)					
Medical obs.	0.0720 (0.403)	-0.147 (0.413)	0.0621 (0.400)	0.0125 (0.425)	0.108 (0.400)	0.387 (0.334)	-0.319 (0.559)	-0.00573 (0.581)					
Doctors	0.951 (1.000)	0.610 (0.968)	0.961 (0.999)	0.771 (1.021)	1.002 (1.010)	0.0905 (1.273)	3.131** (1.410)	2.113 (2.360)					
Non curative beds	0.689 (0.539)	0.549 (0.561)	0.693 (0.538)	0.604 (0.557)	0.735 (0.536)	1.123** (0.546)	-0.924 (1.360)	-0.402 (1.554)					
Observations	79	79	79	79	79	63	62	45					
R ²	0.741	0.753	0.741	0.743	0.737	0.731	0.694	0.681					

Abbreviations: AT, Austria; CZ, Czech Republic; DE, Germany; DK, Denmark; EE, Estonia; ES, Spain; FR, France; IE, Ireland; LT, Lithuania; LV, Latvia; LU, Luxembourg; NL, Netherlands; PT, Portugal. Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $>2 \text{ kBq/m}^2$ and $<10 \text{ kBq/m}^2$, F2 Fallout $>10 \text{ kBq/m}^2$ and $<40 \text{ kBq/m}^2$, F3 Fallout $>40 \text{ kBq/m}^2$. All columns are obtained by the same OLS specification aggregating data over 2000-2013 averages, used controls are only the ones reported in the table. Dependent variable expressed in hospital discharges over 100 inhabitants.

Table S.10 – Simulated fallout, summary of results. Random Effects

Number of significant coefficients	Frequency	Frequency (absolute)
No coefficient significant	67.9%	67.9%
One coefficient	20.9%	
	Positive	1.6%
	Negative	19.3%
Two coefficients	7.5%	
	Both positive	0%
	<i>Of which:</i>	
	- Increasing with fallout and consecutive	0%
	- Increasing with fallout, not consecutive	0%
	Both negative	7.3%
	Opposite signs	0.2%
Three coefficients	3.7%	
	No positive, three negative	3.7%
	One positive, two negative	0%
	Two positive, one negative	0%
	Three positive, no negative	0%
	<i>Of which:</i>	
	- Increasing with fallout and consecutive	0%
	- Increasing with fallout, not consecutive	0%
Total		100%

Results from 1000 simulations. A random fallout dummy assignment was performed respecting the proportions of the baseline fallout specification: 31 areas with no fallout, 23 areas belonging to F1 fallout >2 kBq/m² and <10 kBq/m², 17 areas to F2 fallout >10 kBq/m² and <40 kBq/m², 9 areas to F3 fallout >40 kBq/m². Simulations made according to the Random Effects baseline specification using year fixed effects and the following controls: GDP per capita, population density, proportion of population aged over 60, and per capita number of hospital discharges by medical observation and evaluation for suspected diseases and conditions, number of doctors in the area, and number of available non-curative-care beds in the area, all standardized for 100 inhabitants. Reported frequencies picture how many times the specific fallout combination was significant.

Table S.11 – Fallout effect on hospital discharges by types of neoplasms

Dependent variables: hospital discharges over 100 inhabitants by type of neoplasm													
Type	Description	(1) Malignant colon, rectosigmoid junction and other C18-C21	(2) Malignant trachea, bronchus and lung C33-C34	(3) Malignant skin C43-C44	(4) Malignant breast C50	(5) Malignant uterus C53-C55	(6) Malignant ovary C56	(7) Malignant prostate C61	(8) Malignant bladder C67	(9) Malignant other neoplasms COTH	(10) In situ neoplasms D00-D18.OTH	(11) In situ uncertain or unknown behaviour D00-D18.OTH	(12) Benign colon, rectum and anus D12
ICD10 code													
D _{F1}	0.0824*** (0.0206)	0.0661*** (0.0202)	0.06698 (0.0073)	0.0666*** (0.0182)	0.0196*** (0.00468)	0.0281*** (0.00043)	0.0235** (0.00608)	0.0184** (0.00798)	0.156*** (0.0543)	-0.000469 (0.00194)	0.0768*** (0.0193)	-0.00745 (0.00695)	
D _{F2}	0.108*** (0.0181)	0.0709*** (0.0188)	0.0232*** (0.00826)	0.0657*** (0.0165)	0.0230*** (0.00370)	0.0262*** (0.00467)	0.0322*** (0.00869)	0.0229*** (0.00707)	0.216*** (0.0423)	-0.00451* (0.00237)	0.0870*** (0.0216)	-0.00999 (0.00810)	
D _{F3}	0.163*** (0.0169)	0.144*** (0.0276)	0.0719*** (0.0143)	0.118*** (0.0284)	0.0422*** (0.00628)	0.0614*** (0.0107)	0.0494*** (0.0133)	0.0313*** (0.00741)	0.468*** (0.0879)	0.00555 (0.00475)	0.188*** (0.0321)	-0.00230 (0.00602)	
GDP	0.0196 (0.0238)	0.0150 (0.0212)	0.0124 (0.0143)	0.0198 (0.0205)	-0.00327 (0.00549)	0.000834 (0.00681)	0.00104 (0.00728)	0.00188 (0.00931)	0.142* (0.0773)	0.00317 (0.00392)	0.0210 (0.0254)	-0.00422 (0.00375)	
Population density	0.0208* (0.0119)	0.0382*** (0.0123)	0.0186*** (0.0024)	0.0118*** (0.0183)	0.0061*** (0.00302)	0.0119** (0.00549)	0.0148** (0.00685)	0.0134*** (0.00401)	0.158*** (0.0241)	0.00269* (0.0158)	0.051*** (0.0140)	0.00223 (0.00195)	
Proportion 60+	0.671*** (0.228)	0.401** (0.158)	0.291*** (0.109)	0.277 (0.245)	0.0231 (0.0469)	-0.0321 (0.0533)	0.385*** (0.139)	0.114 (0.0838)	1.367*** (0.509)	0.0607* (0.0321)	0.194 (0.199)	-0.0628 (0.0675)	
Medical obs.	-0.140*** (0.0634)	-0.000683 (0.0622)	0.00843 (0.075)	-0.0727*** (0.0351)	-0.00366 (0.0102)	-0.0512*** (0.0128)	0.0223 (0.0360)	-0.00727 (0.0359)	0.235 (0.233)	0.00448 (0.0159)	-0.0386 (0.0458)	0.0543 (0.0362)	
Doctors	0.113*** (0.0464)	0.0557 (0.0465)	0.0786*** (0.0273)	0.0852** (0.0355)	0.0167 (0.0119)	0.00725 (0.0107)	0.0605*** (0.0226)	0.0443** (0.0209)	0.343*** (0.110)	0.0141 (0.0111)	0.0548 (0.0520)	0.00605 (0.0132)	
Non curative beds	-0.0208 (0.0404)	0.106*** (0.0365)	0.114*** (0.0166)	0.108* (0.0326)	0.00499 (0.00812)	-0.0267** (0.0105)	0.0949*** (0.0299)	0.00498 (0.0166)	0.400*** (0.0166)	0.0349*** (0.00597)	0.0419 (0.0344)	0.106*** (0.0267)	
Observations	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	
Number of id	79	79	79	79	79	79	79	79	79	79	79	79	
Average	0.161	0.135	0.059	0.141	0.039	0.031	0.079	0.085	0.551	0.022	0.239	0.038	
R ²	0.529	0.470	0.537	0.504	0.569	0.526	0.467	0.375	0.613	0.401	0.540	0.392	

Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline fallout dummy specification: F1 Fallout $> 2 \text{ kBq/m}^2$ and $< 10 \text{ kBq/m}^2$, F2 Fallout $> 10 \text{ kBq/m}^2$ and $< 40 \text{ kBq/m}^2$, F3 Fallout $> 40 \text{ kBq/m}^2$. Dependent variables expressed in hospital discharges over 100 inhabitants. Results are obtained by Random Effects specification with robust standard errors including year fixed effects and all the controls shown in the table. All hospital discharges data by type of neoplasm are not available for Estonia (EE).

Table S.12 – Pairwise correlations, deaths and hospitalizations by neoplasms

Hospital discharges by neoplasms at time:	Deaths by Neoplasms	Obs
t	0.1940***	864
t - 1	0.2016***	784
t - 2	0.2177***	704
t - 3	0.2280***	624
t - 4	0.2389***	544
t - 5	0.2511***	464
t - 6	0.2594***	384
t - 7	0.2665***	305
t - 8	0.2733***	227
t - 9	0.2739*	150
t - 10	0.2733	74

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The values are the results of the pairwise correlations between deaths by neoplasms and contemporaneous and lagged hospitalizations by neoplasms. Results are obtained using the sample of the baseline analysis. Data cover the time range 2000 - 2010.

Table S.13 – Estimating the probability of fallout.

Dep. Variable	(1) Fallout	(2) Fallout	(3) Fallout
Passage	0.203*** (0.0473)		0.128** (0.0551)
Passage ²	-0.0129** (0.00616)		-0.00356 (0.00578)
Rain		-0.107* (0.0613)	-0.151*** (0.0487)
Rain ²		0.00880 (0.00573)	0.0153*** (0.00404)
Interaction			0.262** (0.101)
Interaction ²			-0.0549*** (0.0166)
Constant	0.0960** (0.0407)	0.816*** (0.144)	0.293* (0.153)
Observations	73	73	73
R-squared	0.535	0.040	0.652

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Passage is the total number of days the region was covered by the plume. Rainy is the total number of rainy days. Interaction is total number of rainy days in which the plume was over the region. The outcome variable is expressed as a dummy, with 0 = no fallout and 1 = fallout, any level. OLS estimation with robust standard errors.

Table S.14 – Radioactive fallout by combination of radioactive cloud passage days and rainy days

Days Passage	Days of Rain											
	0	1	2	3	4	5	6	7	8	9	10	11
0	0	0	0	0	0	0	0	0	0	0	0	0
1								1		1	1	
2		1 [†]									1	
3	1											
4									1			
6	1 [†]					1 [†]	0.7	0.5	0.3	0.7		
7	1 [†]	1	0.5 [†]	1	1	1	1[†]	1	1	1 [†]		
10				1		1						

This summary table indicates the mean values of the fallout dummy used in Table S.13 by each combination of radioactive cloud passage days and rainy days in the sample. Days Passage is the total number of days the region was covered by the plume. Days of Rain is the total number of rainy days. The fallout variable is expressed as a dummy, with 0 = no fallout, 1 = fallout, any level. Bold figures correspond to areas with the heaviest fallout concentration corresponding to D_{F4} , and figures with a [†] superscript signal the position of areas with heavy fallout concentration corresponding to D_{F3} .

Table S.15 – Average interaction days by fallout categories.

Fallout concentration	Obs.	Mean	Std. Dev.
No fallout	31	0.935	1.879
Any Fallout	42	2.667	1.817
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D_{F1}	22	2.955	1.495
D_{F2}	11	2.364	2.203
D_{F3}	7	2.286	2.430
D_{F4}	2	2.500	0.707
<hr/>			

The table displays the mean interaction days between cloud passage and rainy days in the sample, from the data used to estimate Table S.13's models. Interaction days refers to the total number of rainy days in which the plume was passing over each region. “Any fallout” refers to the areas that were exposed to fallout, of any intensity. D_{F1} , D_{F2} , D_{F3} and D_{F4} refer to the fallout categories used in the main analysis. The difference between the sets “no fallout” and “any fallout” is highly statistically significant.

Table S.16 – Hospitalization costs, average cost

Country	(1) Total expense in inpatient curative care <i>Millions of Euros</i>	(2) Bed days of inpatients <i>Days</i>	(3) Daily cost of a hospitalization <i>Euros</i>	(4) Length of stay by neoplasms <i>Days</i>	(5) Average cost of a hospitalization by neoplasms <i>Euros</i>
AT	€ 8466.89	20076674	€ 421.81	7.76	€ 3274.37
CZ	€ 25337.10	22706184	€ 1127.57	10.00	€ 11278.75
DE	€ 63094.33	186476240	€ 338.48	10.03	€ 3393.72
DK	€ -	5001282.5	€ -	6.84	€ -
EE	€ 249.14	1503536.6	€ 146.41	7.91	€ 1158.24
ES	€ 19874.98	30714612	€ 673.83	9.73	€ 6555.64
FR	€ 54641.06	62730084	€ 872.65	7.88	€ 6878.79
IE	€ -	€ -	€ -	10.82	€ -
LT	€ 921.47	6433731	€ 144.21	9.59	€ 1383.14
LU	€ 533.47	636924.125	€ 826.85	8.98	€ 7420.96
LV	€ 378.97	3602870	€ 104.86	9.00	€ 943.72
NL	€ 16754.10	11232391	€ 1514.77	7.93	€ 12008.00
PT	€ -	6587893.5	€ -	7.82	€ -
<i>Source:</i>	<i>Eurostat</i>	<i>Eurostat</i>	<i>Computed</i>	<i>Eurostat</i>	<i>Computed</i>

Column 1 displays the annual average of total expense in inpatient curative care at the national level from Eurostat. Column 2 displays the annual average of total bed days of hospitalizations for inpatients at the national level from Eurostat. Column 3 is computed as the annual ratio between Column 1 and Column 2. Column 4 displays the average length of stay of an hospitalization by neoplasm computed as country average from Eurostat data at NUTS 2 level. Column 5 displays the average cost of an hospitalization by neoplasm, computed as value in Column 3 multiplied by value in Column 4. All figures are to be intended as annual averages for the period 2000-2013. The average cost for DK, IE and PT could not be computed due to missing values.